

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Authorizing Permissive Use of the “Next	)	GN Docket No. 16-142
Generation” Broadcast Television Standard	)	
	)	

**COMMENTS OF GATESAIR INC.**

GatesAir Inc. (“GatesAir”) hereby submits these Comments in response to the *Notice of Proposed Rulemaking* (“NPRM”) released by the Federal Communications Commission (“FCC” or “Commission”) on February 24, 2017 in ATSC 3.0 proceeding.<sup>1</sup>

**I. INTRODUCTION AND SUMMARY**

GatesAir wholeheartedly endorses the Commission’s efforts to adopt flexible rules for broadcasters to transition to the new broadcast standard known as ATSC 3.0 or “Next Generation TV.” In support of the broadcast industry, our customers, and having played a critical role in the development and testing of Next Generation TV, GatesAir is an ardent supporter of the new standard, which will bring an overall better television viewing experience to the American public. Even beyond that considerable benefit, ATSC 3.0 has the potential to save lives by enabling advanced emergency alerting and is designed to facilitate new and innovative business models

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<sup>1</sup> In re Authorizing Permissive Use of the “Next Generation” Broadcast Television Standard, *Notice of Proposed Rulemaking*, GN Docket No. 16-142, FCC 17-13 (rel. Feb. 24, 2017). The NPRM was issued pursuant to a Joint Petition for Rulemaking filed by America’s Public Television Stations, the AWARN Alliance, the Consumer Technology Association, and the National Association of Broadcasters. See Media Bureau Seeks Comment on Joint Petition for Rulemaking of America’s Public Television Stations, The AWARN Alliance, The Consumer Technology Association, and The National Association of Broadcasters Seeking to Authorize Permissive Use of the “Next Generation TV” Broadcast Television Standard, *Public Notice*, GN Docket No. 16-142, DA 16-451 (rel. Apr. 26, 2016) (the “Petition”).

for broadcasters.

The Commission should move forward expeditiously in authorizing the voluntary transition to ATSC 3.0, as proposed in the Petition. From a regulatory perspective, the Commission can best support a rapid transition to Next Generation TV by adopting the “bootstrap” portion of the Physical Layer as a permissible broadcast standard and allowing industry flexibility in the implementation and adoption of the remaining technical requirements. This approach will encourage the same technological innovation in the broadcast industry found in other communications sectors and allow free over-the-air television to flourish and adapt to the changing demands of the viewing public.

## **II. ATSC 3.0 IS TOMORROW’S TELEVISION, TODAY**

### **A. The Next Generation TV Transmission Standard Confers Numerous Benefits Over the Current Transmission Standard**

The current television transmission standard, ATSC 1.0, is more than twenty years old, and is showing its age. Since it was launched in 1996, a number of significant developments have occurred, including improvements in video coding efficiency, the development of more efficient and immersive audio, the proliferation of mobile devices, and a spike in consumers’ expectations for interactivity. ATSC 1.0 is an old standard that neither has the capability to incorporate advances in technology, nor allows broadcasters to meet consumers’ demand for programming and services accessible while on-the-go and from a wide variety of mobile devices. ATSC 3.0 represents a technological leap forward and will address these issues, while also ensuring that broadcasters and broadcast technology companies can continue to innovate and respond to consumers’ demands.

As an IP-based technology, ATSC 3.0 is scalable, interoperable, and adaptable. It can be upgraded readily, and issues and problems can be addressed quickly via a software tweak or upgrade. ATSC 3.0 is also flexible and evolvable, making it future-proof. The new standard is being designed and engineered to provide broadcasters with a set of tools that will allow them to construct new services to match new or existing business models. For example, the signaling aspect of the standard will permit new receivers to take advantage of new technologies when they are available.

In addition, Next Generation TV more closely aligns with how consumers watch TV today and the kinds of services and functionality they expect. Consumers increasingly want to view content on their mobile devices when they are on the go. ATSC 3.0's robust signal allows for significantly improved mobile reception compared to ATSC 1.0. An ATSC 3.0 signal is also capable of deep-building penetration, making it easier for consumers to view content from fixed locations as well as mobile ones. Consumers will also benefit from the additional programming streams, better picture, enhanced sound, and new personalization features made possible by Next Generation TV.

ATSC 3.0 not only allows broadcasters to give consumers what they want, it enables delivery of critical information that consumers need during emergencies. ATSC 3.0 supports advanced emergency alerts (including the ability to "wake up" devices) and datacasting for law enforcement, first responders, and emergency management organizations. ATSC 3.0 has the potential to provide a robust and reliable public warning and safety information communications system that is independent of cellular networks. In emergencies, ATSC 3.0 can deliver rich media, multilingual, and geo-targeted content – including video, storm tracks, evacuation routes, flood maps, and earthquake early warnings – to millions of consumer devices simultaneously.

In addition to providing public interest and safety benefits, the Next Generation TV standard will also help the broadcast business model adapt to evolving viewer habits. The improved picture, sound, and all-around superior service enabled by Next Generation TV will allow broadcasters to maintain or increase viewership which, in turn, should increase ad revenue that broadcasters could use to provide better service to viewers. Meanwhile, the IP backbone of Next Generation TV will allow broadcasters to explore or better utilize new business models, including targeted advertising and non-television content distribution services.

**B. GatesAir Has Been Instrumental in the Development of ATSC 3.0 and Is an Enthusiastic Supporter of ATSC 3.0**

GatesAir supplies the majority of digital television excitors and transmitters utilized in the United States today. In addition to its headquarters in Cincinnati, Ohio, GatesAir maintains broadcast research centers across the United States. The company's Quincy, Illinois, transmission manufacturing facility is the largest such facility in the world. GatesAir has devoted considerable R&D resources to developing transmission systems capable of utilizing ATSC 3.0 and other future-compatible transmission technologies.

GatesAir has played a critical role in the on-going development of ATSC 3.0. In addition to contributing engineering expertise to the Advanced Television Services Committee, the entity responsible for developing the multitude of standards that will comprise the three layers of ATSC 3.0, GatesAir is involved in real-world tests of the new transmission standard. For example, tests conducted in Madison, Wisconsin and Cleveland, Ohio using a GatesAir transmitter confirmed the significantly improved mobile reception capability of Next Generation TV and provided critical data points that will contribute to the continued development of the new transmission standard. GatesAir transmitters have also been used for tests of single frequency networks in Korea (which will launch commercial ATSC 3.0 service this year) and on channel 43 in

the Baltimore, Maryland and Washington, DC markets. In addition, GatesAir provided the transmitter and exciter for the nation's first live Next Generation TV simulcast from a commercially licensed television station, which occurred on June 26, 2016 from WRAL-TV in Raleigh-Durham, North Carolina. Furthermore, GatesAir worked with a coalition of tower, engineering, and broadcast technology firms to develop a guide to help the broadcast industry prepare for Next Generation TV. The guide is available on GatesAir's website and will be updated and evolve as additional elements of the standard are completed.<sup>2</sup>

Finally, GatesAir is a member of the Advanced Warning And Response Network (AWARN) alliance, which is working to pioneer advanced emergency alerting via ATSC 3.0. AWARN is developing an ATSC 3.0-based standard alerting protocol that broadcasters and emergency management officials can leverage to reach the public with emergency alerts and supplementary information. These alerts and information can potentially go beyond crawls and text-based messages to include video and audio clips, graphics, still images, radar images, maps of evacuation routes, and lists of emergency shelters. AWARN is exploring additional innovative and potentially lifesaving features such as the ability to wake-up devices in "sleep" mode to deliver critical, time sensitive emergency information.

### **III. THE DEPLOYMENT OF ATSC 3.0 WILL BE VOLUNTARY AND MARKET-DRIVEN, AND SHOULD BE APPROVED EXPEDICIOUSLY TO COINCIDE WITH THE REPACK OF BROADCAST SPECTRUM**

#### **A. The Commission Should Apply a Light Regulatory Touch to ATSC 3.0**

The FCC needs to do very little to bring the benefits of Next Generation TV to consumers – broadcasters, equipment manufacturers, and the market will take care of the rest. Very few of

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<sup>2</sup> ATSC 3.0 Transition and Deployment Guide, *available at* <http://info.gatesair.com/atsc-3.0-guide-download>.

the Commission's rules and policies regulating television broadcasting need be amended to facilitate the introduction of ATSC 3.0.

GatesAir agrees with the Commission that the transition to Next Generation TV should be voluntary and market-driven. Next Generation TV transmissions will operate within broadcasters' existing 6 MHz television channels and be subject to the same radio frequency interference constraints and requirements that apply to the current DTV standard. There is no need, therefore, for the Commission to impose additional regulations on broadcasters; existing regulations are sufficient to ensure the orderly transmission of broadcast signals. Similarly, regulations concerning simulcasting are unnecessary. As envisioned by the NPRM, ATSC 3.0 will be deployed initially via simulcasting arrangements between broadcasters to allow for innovation while ensuring consumers continue to receive the broadcast television upon which they rely using their existing equipment. Any concerns that the Commission or commenters have with this approach will be adequately addressed by the marketplace. For example, broadcasters are incentivized by financial realities and their underlying desire to serve their audiences to work out local simulcasting arrangements to ensure viewers do not lose coverage.

Nor is there a need for regulation in light of the repack of broadcast spectrum; deployment of Next Generation will not impact the 39-month repacking schedule. While some broadcasters may elect to transition to Next Generation TV concurrent with their post-auction transition, many others will not. Broadcasters changing channels or channel sharing would have no reason to enter into a simulcasting arrangement that would negatively impact their post-auction transition deadline. Even broadcasters that elect to commence transmission under the new standard should have no effect on the overall transition schedule. Many broadcasters already utilize equipment that is ATSC 3.0-ready. Others will be able to transmit an ATSC 3.0 signal without

undertaking costly modifications to their main transmitters. Products such as GatesAir's Maxiva XTE software defined exciter, meanwhile, will allow broadcasters to take full advantage of the enhanced data transmission capabilities made possible by ATSC 3.0. With no mandated deadline by which Next Generation TV must be implemented, simulcasting arrangements can be worked out during or after the repack.

Rather than impose additional regulatory burdens on broadcasters seeking to bring innovative services and technologies to their viewers, the Commission should utilize a light regulatory touch and give broadcasters flexibility to implement ATSC 3.0 on their own timelines and as business demands dictate.

**B. The Commission Should Take Steps to Accelerate the Adoption of ATSC 3.0**

Given the public interest benefits of Next Generation TV, the Commission should look for ways to accelerate its adoption among broadcasters. Two ways of accomplishing this goal include authorizing ATSC 3.0 promptly so as to coincide with the repack, and allowing broadcasters to utilize vacant in-band channels to serve as temporary host facilities.

**1. The Post-Auction "Repack" Provides a Unique Opportunity to Stimulate Adoption of Next Generation TV**

With nearly 1,000 television stations transitioning to new channels over the next three years due to the repack of broadcast spectrum following the incentive auction, a large segment of the broadcast industry is already evaluating its transmission capabilities. Commission approval of the Next Generation TV standard will encourage broadcasters to consider the new standard when planning for the future, creating overall efficiencies.

Equipment will undoubtedly be a part of such planning, and authorizing ATSC 3.0 would allow broadcasters to consider the new standard even where they may incur incremental, non-reimbursable costs to include ATSC 3.0 functionality. For example, if a new antenna system

must be purchased for a channel change, the broadcaster could ensure that the antenna conforms to the RF requirements for ATSC 3.0 adoption. If a new transmitter will be required for a channel change, a broadcaster could evaluate and pick products that are software-upgradable to ATSC 3.0, and have the ability to easily add additional amplification to support the power requirements related to Vpol for ATSC 3.0. In addition, the eventual installation of ATSC 3.0 equipment could mean changes to tower and tower site infrastructure. Incorporating ATSC 3.0-related considerations into tower structural engineering studies, tower modifications, and transmitter, RF system, and antenna installations during the repack will create efficiencies for broadcasters later deploying Next Generation TV. The Commission should take advantage of the repack and consider it an opportune time for broadcasters to begin to utilize ATSC 3.0. Getting the timing right now will facilitate the market-driven industry and consumer transition to ATSC 3.0 in the future.

2. To Facilitate the Transition to ATSC 3.0, Broadcasters Could Be Permitted to Temporarily Utilize Vacant Channels

As another catalyst to encourage adoption, the Commission could consider providing broadcasters additional flexibility in deploying ATSC 3.0, such as by allowing broadcasters to use vacant in-band channels remaining in a market after the incentive auction repack. Such channels could serve as temporary host facilities for ATSC 1.0 or ATSC 3.0 programming.<sup>3</sup> Unlike during the DTV transition, companion channels are unlikely to be available for every television station transitioning to Next Generation TV. Nevertheless, where vacant channels are available, the Commission could provide broadcasters the option of utilizing a dedicated transition channel to ensure continuity of service. Working in concert with the voluntary “lighthouse”

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<sup>3</sup> See NPRM at ¶ 14 (seeking comment on deployment alternatives to accelerate adoption of ATSC 3.0).

concept, this approach could ease the transition to Next Generation TV and allow the American public to reap its benefits sooner and with fewer hiccups.

**C. Consistent with a Light Touch Approach, the Commission Need Not Adopt a Synchronization Standard or Tuner Mandate at this Time**

In the NPRM, the Commission tentatively concludes that it is not necessary to adopt a specific synchronization standard in order to authorize an ATSC 3.0 single frequency network (“SFN”).<sup>4</sup> GatesAir agrees. By limiting the government’s role in dictating the intricacies of the broadcast standard, the Commission can fulfill its responsibility to oversee the airwaves while, at the same time, preserving the ability of broadcasters to innovate and evolve in the future. As in the DTS context (and consistent with the FCC’s approach in non-broadcast bands), broadcasters should be allowed to innovate so long as the synchronization used to implement an SFN minimizes interference within the network and provides adequate service. There is no need to dictate a particular synchronization standard – whether it be A/322 or another standard – so long as broadcasters utilizing ATSC 3.0 meet those interference and service expectations.

In addition, the Commission should consider providing flexibility to stations deploying SFNs. For example, a station could be permitted to expand its interference footprint when doing so would not extend the station’s 26 dBμ contour beyond the 26 dBμ contour of any other station.<sup>5</sup> Alternatively, stations could be allowed to optimize their spectrum utilization by being permitted to provide service within their licensed service areas using any facilities that do not result in emissions in excess of 26 dBμ at the single-transmitter -26 dBμ interference contour. The Commission could also modify its DTS policy to permit each station participating in a joint SFN to cover the

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<sup>4</sup> *Id.* at ¶ 62.

<sup>5</sup> Mutual exclusivity could be addressed consistent with existing FCC application processing rules when it arises.

area covered by the largest station, as well as all of the non-overlapping pre-SFN areas served by any other station participating in the joint SFN.

The Commission also tentatively concludes that a Next Generation TV tuner mandate or HDMI port requirement is not necessary at this time because the transition to ATSC 3.0 will be voluntary and market-driven, with ATSC 1.0 broadcasting continuing indefinitely.<sup>6</sup> GatesAir agrees with this approach as well. Next Generation TV will succeed because consumers will recognize its tremendous benefits, creating demand for receivers capable of receiving an ATSC 3.0 signal. There is simply no need for the government to impose a mandate on receiver manufacturers – the market is incentive enough. However, to ensure that manufacturers are not deterred from including ATSC 3.0 tuners in receive devices, the Commission should amend its rules to provide that any device that includes an ATSC 3.0 tuner and receives all channels in the post-auction television band meets the All Channel Receiver mandate as reflected in the Commission's rules.

#### **IV. CONCLUSION**

GatesAir appreciates the opportunity to submit these comments and urges the Commission to act expeditiously to bring the future of television to American consumers.

Respectfully submitted,

GATESAIR INC.

/s/

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<sup>6</sup> NPRM at ¶ 71.